DOCUMENT RESUME

ED 172 903 **PS 010 603**

AUTHOR Prodi, Ann; Willie, Diana

TITLE Parents' Responses to Normal and Premature Infants.

PUB DATE Mar 79
NOTE 9p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (San Francisco, California, March 15-18, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Arousal Patterns; Attachment Behavior; Aural Stimuli; *Child Abuse; *Emotional Response; *Infant Behavior; Mother Attitudes; Mothers; *Parent Child Relationship; Parents; *Premature Infants; Visual Stimuli
IDENTIFIERS *Crying

ABSTRACT

This paper discusses a series of three studies investigating the influence of infants' characteristics and signaling behavior on parents. Videotapes of either smiling/cooing/gurgling or crying infants were used to elicit parents' physiological and affective responses. Measured physiological responses included skin conductance, heart rate, and systolic and diastolic blood pressure. A 10-item mood adjective checklist, a demographic information sheet and the Infant Temperament Questionnaire were completed by parents after the videotape presentation. It was found that images of crying infants elicited a pattern of autonomic arousal usually associated with response to an aversive stimulus. Reported emotional responses to the crying infant were consistently aversive. A crying infant identified as premature was perceived as more aversive than a full-term infant. Mothers of premature infants rated themselves significantly more happy, attentive, and alert than mothers of full-term infants. However, they found the image of the premature infant less pleasant than did mothers of full-term infants. Mothers of premature infants also were more physiologically aroused when viewing the premature infant than were mothers of full-term infants. Insofar as premature infants are more likely to be abused than those born full-term, the findings that premature infants increased autonomic arousal or are perceived as especially aversive when crying may have important implications for the understanding of child abuse. (Author/RH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED172903

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Parents' Responses to Normal and Premature Infants

Ann Frodi
University of Michigan

Diana Wille
University of Northern Iowa

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Ann Frodi

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

PS010603

Paper presented to the Society for Research in Child Development

San Francisco, California, March 1979

In our presentation today, we want to discuss three studies aimed at investigating the effects of specific infants' signals and characteristics on parents, with a special emphasis on premature babies. I will discuss the first two briefly and dwell more on the third one. Our studies differ from most investigations of parental responsiveness in that we have assessed patterns of physiological and self-reported emotional responses in parents, rather than overt behavior. Our goal has been to elucidate the behavioral propensities elicited by infant signals.

Since the method employed in all 3 studies was rather similar, we will briefly review it before discussing the specific goals of each study. In the first 2 studies husbands and wives came to the laboratory, in the 3rd only mothers, and were seated comfortably in adjacent alcoves about 4 feet from a TV monitor. Experimenters then affixed blood pressure cuffs, and the electrodes for monitoring skin conductance and heart rate. A five minute rest period preceded any presentaiton of the experimental stimuli. In all cases, the stimuli themselves were 6-minute videotape sequences of an infant. Each tape consisted of three segments, each lasting 2 minutes. In the first and 3rd segments, the infant was shown quiescent, while in the middle segment it was either crying or smiling. When smiling the infant was heard cooing and gurgling, and during the cry segment, the cry was audible and reached peaks of 70 decibels.

The physiological measures employed were skin conductance (SC) and heart rate (HR) which were recorded continuously on a polygraph throughout the experimental session, and systolic and diastolic blood pressure (SBP and DBP) measured twice before the videotape presentation and then at the beginning and end of each tape segment. For all physiological measures the reading at the end of the first quiescent segment constituted baseline with respect to which change scores were computed.

After the videotape presentation, the subjects completed a 10-item mood adjective checklist referring to each of the three tape segments, as well as a demographic information sheet, and a standard questionnaire, namely the Infant Temperament Questionnaire (Pedersen et al., 1976).

In the first study, two videotapes were involved. Half of the 96 subjects viewed a quiescence-cry-quiescence sequence. In an introduction, the baby was described to equal proportions of the sample as either a premature infant, a difficult infant, or a normal infant. In reality all parents viewed the same 5-month-old full-term infant.

Slide 1

The results of the first study indicated that infant smiles and cries elicited reliably different physiological responses. The cries elicited a pattern of autonomic arousal as evidenced by significantly elevated DBP and SC -- a pattern that is usually associated with the response to an aversive stimulus. Moreover, the emotions that the parents reported were consistently of an aversive nature; for example, irritation, disturbance, and annoyance. Further, the response was even more marked when the infant was portrayed as atypical. The infant described as either "difficult" or "premature" elicited greater arousal and less sympathy when it was crying than did the normal infant. The smiling infant, on the other hand, triggered negligible physiological changes and consistently positive emotions, such as happiness and attentiveness.

The facts that adults responded to infant cries as if they were aversive stimuli and that aversive stimuli are known to be elicitors of aggressive outbursts (Berkowitz, 1974) suggested to us that infant or child behavior may play a role in determining when child abuse occurs. This led us to

wonder whether some infant signals or characteristics might be especially aversive to adults. We were intrigued by reports that prematurely born children were more likely to be abused later by their parents ( ). Thus in the second study we compared physiological responses to the cries emitted by a premature infant and a full-term infant.

Four videotapes served as the stimuli, one fourth of the 64 parents viewing each one. Two tapes depicted the same, full-term newborn infant, and the other two showed a prematurely born infant. Onto one tape of each type we dubbed the cry of a premature baby, and onto the other two a fullterm infant's cry.

Slide 2

In all, the results of the second study not only replicate but also extend the conclusions of the first study. Most significant, perhaps, was the fact that the cry and appearance of a premature infant were perceived as more aversive than those of a normal or full-term infant. This perception was supported by physiological measures -- that is, there were increases in DBP, HR, and SC -- and by the report that the parents were less eager to interact with the premature infant. Further analyses revealed that the sound of the cry was particularly important, although the effect of prematurity on the parents' responses was maximized when the stimulus consisted of a premature infant's cry and face. It is important to note, moreover, that the infants whose cries and features were filmed were all scheduled to be released to their parents within 36 hours; thus the aversive features of the premature's appearance and cry are evident not simply at birth, but at the critical time when the baby is placed in the care of its parents.

The third investigation was conceived with the results of these studies

in mind. It was designed both to replicate our finding that the facial features and the cry of a premature infant elicited from mothers a more noticeable response than did a normal infant, and to determine whether the patterns of physiological and emotional responses to the signals of premature and full-term infants differ depending upon the birth status of the parents' own child. Subjects in the third study were 16 mothers who had premature babies of their own and 16 mothers of full-term infants. All subjects had their babies at home for about 7 months prior to the study. The same procedure was used as in the first 2 studies, except that all mothers viewed 2 tapes, one depicting a premature infant, and one showing a full-term infant. The order of presentation was counterbalanced. The infants were filmed in a newborn ward.

Slides 3 & 4

Now to the results. Repeated measures analyses of variance of the mood ratings across the two videotapes yielded significant segment effects on 8 of the 10 moods. As can be seen in slide 5, the subjects became significantly less happy, as well as more distressed, alert, sympathetic, irritated,

Slide 5

annoyed, disturbed and frightened during the cry than during the quiescent segments of both videotapes. In addition (not shown in the slide), mothers of premature babies were significantly happier, more attentive, and more alert than the mothers of the full-term infants.

Repeated measures analyses of variance across the videotape segments were also conducted on the physiological variables. The results indicated that all subjects experienced autonomic arousal in response to the cry.

Interestingly, the mothers of premature infants exhibited greater arousal in response to the premature cry than did the mothers of full-term infants. This was evident on measures of SC and DBP.

Since our major interest was in differences between the 2 groups of mothers, we will now focus on the cry segments of the tapes only. Although both cries elicited negative moods and autonomic arousal from both groups of mothers, the cries affected the two groups of mothers differently. The data in slide 6 indicate that when viewing the premature infant, the

Slide 6

mothers of premature infants rated themselves significantly more happy, attentive, and alert than did the mothers of full-term infants, although they found the stimulus infant less pleasant. At the beginning of the cry (C_1), the cry elicited greater increases in DBP and SC among the mothers of premature infants than among the mothers of full-term infants. The cry also elicited a greater HR increase in these mothers at both C_1 and C_2. Similar group differences occurred while viewing the full-term infant. Although the mothers of premature infants rated themselves as happier and more sympathetic toward the stimulus baby, they displayed significantly greater DBP and SC increases at both C_1 and C_2 than did the mothers of term infants. No significant interactions between Mother category and Type of Infant cry were obtained in the analyses involving the infant cry as a within-groups factor. And there were no significant effects for type of infant cry.

The infant temperament questionnaire assesses the mothers' perception of the easiness or difficulty of their own infant's temperament. Although the range in the present sample was small, arbitrary cut-offs were used to define extreme scorers. By these criteria, 11 mothers rated their babies as Easy, whereas 8 mothers rated their babies Difficult. Mothers who perceived their

own child as Easy were more alert, tended to be more attentive, and were more willing to interact with the stimulus infant than those who perceived their infants as difficult. The mothers of "easy" babies also exhibited significantly lower DBP and HR responses when exposed to the crying baby than did the mothers of difficult babies. These results appear rather striking considering both the small sample sizes and the relative homogeneity of the sample as a whole.

The studies thus showed that infant cries elicit from adults a pattern of physiological response characterized by autonomic arousal accompanied by generally negative reported moods. This response pattern was accentuated when the infant was atypical, or was perceived or labelled as atypical. Furthermore, we found that the nature of the subjects' parenting experiences influenced the manner in which they responded to the cry stimuli. Specifically, mothers whose own infant had been born prematurely evinced greater physiological arousal in response to the premature infant than did those whose babies had been delivered at term. In fact, the mothers of premature infants responded with greater arousal to the cries of both full-term and premature infants. These results suggest that the mothers of prematures, whose initial experiences were with atypical infants, have come (presumably through a process of generalization) to respond to all infant signals with greater autonomic arousal than that which is typical. It remains possible, of course, that the mothers of premature and full-term infants might have responded differentially to the cries of premature and full-term infants had the stimuli used in the present study been more different from one another or more representative of the classes they were supposed to represent.

An additional indication of the extent to which the subjects' own experiences affected their responses to the standard stimuli was the finding that the mothers who perceived their own infant as difficult responded more

negatively and were more aroused physiologically than were the mothers who perceived their own baby as Easy.

The fact that premature infants elicit increased autonomic arousal and/or are perceived as especially aversive when crying may have important implications for the understanding of child abuse. According to Berkowitz (1974), aggressive outbursts may occur when an aroused person is exposed to a stimulus which s/he perceives to be aversive. Thus, infants who cry a great deal or whose features are perceived as aversive may themselves become aversive stimuli through a process of conditioning and may be more likely to elicit aggressive behavior from their caretakers - even after the initially aversive characteristics have been outgrown. This would help account for the fact that prematurely born children are more likely to be abused than those born at term (Elmer & Gregg, 1967; Fontana, 1973; Klein & Stern, 1971; Simons et al., 1866).